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MALLEIN.

In our correspondence column to-day Mr. Charles Morgan corroborates the observation of M. Fayet that a severe local reaction to mallein, especially if the injection has been made low down the neck, is often accompanied by lameness of the forelimb on the same side as the injection. In calling attention to the phenomenon M. Fayet expressed the opinion that it had not received due attention from veterinarians: and this could probably be said of those in our country as well as his own, though at least one English clinician has observed the symptom independently. Without magnifying the importance of the matter, it may fairly be said that it appears likely to be of use at times in assessing some reactions—it is, in M. Fayet's words "a secondary sign to the reaction of mallein which should not be forgotten."

Perhaps there are still not a few veterinary surgeons who fail to take a sufficiently comprehensive view of all the results of the mallein and tuberculin tests. There is a natural tendency to allow the major signs of a reaction to unduly obscure the minor ones; and this has led some men very far wrong indeed. We have even known one highly-skilled clinician who, judging from a considerable experience that the local reaction to mallein was more reliable than the thermal one, discontinued temperature-taking for some time, until an accidental and rather disconcerting occurrence showed him his mistake. This was an extreme example, for a thermal reaction is one of the major signs of the mallein test; but it illustrates a common danger in practice.

It is quite conceivable that there may be really important reactions to mallein and tuberculin which we have not yet learned to recognise. Most men, for instance, regard the intra-dermal tuberculin test as producing solely a local reaction—but there are observers who attach much importance to a rise of temperature in connection with it; and, if this is correct, the value is obviously increased.

CANINE TETANUS.

Recently we printed a note on this subject, with the result that last week we were able to publish four new clinical reports of it. These are valuable, for the condition is undoubtedly rare; but does not their synchronous appearance, with the dates given of their occurrence, suggest that many are unrecorded? How many other conditions are there, not so rare as canine tetanus, of which we have even fewer records? This is an illustration of the amount of clinical experience of which the profession at large never receives the benefit.

TUBERCULIN.

It may be of interest to some of your readers if I give my experience in the use of tuberculins of British and French manufacture. Personally I am convinced that these tuberculins do not always give the same reaction. At one time I had the utmost confidence in the tuberculin made by a British firm of repute whose products I used. When the Tuberculosis Order first came into force I had three months' experience in testing the veracity of tuberculin of British manufacture. All the cases that gave a reaction were slaughtered, and on post-mortem all of them proved to be affected with tuberculosis in an advanced stage.

One case that was reported as being suspected of suffering from tuberculosis was an aged blue-grey cow, whose appetite was fickle. She was hide-bound, emaciated, low in the neck, with high shoulder points, and suffering from diarrhœa. This cow did not react to the tuberculin test, consequently I did not have her slaughtered at the time as tuberculous, though so far as I was able to judge from general appearance the cow was tuberculous. About a month afterwards this cow was unable to rise. The owner expressed a wish that I should make an examination and ascertain the cause of her condition. On post-mortem, I found a great number of calcareous deposits in the bile ducts, and a diseased condition of her liver that accounted for the cow's death, but no trace of tuberculosis could be found.

In all the cases on which I made post-mortem examinations the tuberculin test proved to be correct, and in all these cases British-made tuberculin was used.

In this part of the country periodical sales are held where pedigree animals are sold as having passed the tuberculin test, and buyers, buying for export, prefer the name of the tuberculin used to be stated on the certificate. Sellers inform me that export buyers put little value on the certificate unless Pasteur tuberculin has been used. At one time I considered this a mere whim on the part of the buyer, as I thought that a reputable British firm would be as apt to turn out a tuberculin quite as reliable as that issued by any French firm; consequently I gave the British makers the preference. Time and experience have somewhat modified my views, and not, I think, without reason, as the following incident will show.

I was asked by a gentleman to test for him six young bulls, their ages ranging from ten to twelve months. I injected each with a dose of the so-called Pasteur tuberculin according to the instructions sent with the material. I may here say that

I never give large or double doses, but always make a practice when testing to follow the instructions sent with the tuberculin. In this case all the six bulls failed to pass the test. This proved very disappointing, the owner declaring he had no faith in the test. I received the owner's permission to retest them in six weeks, using on this second occasion a British-made tuberculin, four of the bulls, to my surprise, passed the test, and two failed. Six weeks later I again called, and the owner kindly permitted me to again test four of the bulls—two that had failed to pass the test when both kinds of tuberculin were used, and two that had passed the test when only British-made tuberculin was used. On this occasion I again used Pasteur tuberculin, and again the whole of the four failed as on the first occasion. All the bulls were in the best of health during each successive time of testing, and none of them showed any local swelling at the seat of injection.

I mention this because I was informed by a gentleman who had many animals tested, that in a good many of the animals that failed to stand the tuberculin test he had observed a local reaction in the form of a swelling at the seat of injection. Personally I have not observed any such swelling, and if I did I would not consider the test reliable in such a case.

Both tuberculins ought to have given the same reaction, but as we have seen they did not do so. I have tested cows that have been bought as having passed the British tuberculin test. A month afterwards I have tested them with Pasteur tuberculin and they have reacted. These cows have grazed during the month with cows that had passed the tuberculin test. Infection was thus reduced to a minimum. I have tested cows, heifers, and bulls, as often as three times over, and upon failing once to Pasteur tuberculin the same failure with the same tuberculin always followed.

I am not in a position to say that Pasteur tuberculin gives the correct diagnosis. This could only be ascertained by very careful post-mortem examinations, which an ordinary veterinary surgeon has not the opportunity to carry out. But what I do feel disposed to say is that it gives a reaction in some cases when other tuberculins used fail to do so.

WM. TOPPIN HEWETSON.

ABSTRACTS FROM FOREIGN JOURNALS.

OBSERVATIONS UPON THE PERIOD OF INCUBATION OF EPIZOOTIC LYMPHANGITIS.

Chapron has published, in *Le Recueil de Médecine Vétérinaire* of December, 1916, some observations upon this subject. Epizootic lymphangitis has been repeatedly studied with regard to the duration of its period of incubation. Experimental inoculation shows that the period between the moment of infection and the appearance of the first symptoms of the disease is generally very long, and extends to weeks. The same is thought to be the case in natural infection; but the time at which the cryptococcus has penetrated the organism is almost always unknown. Chapron's observations enable the duration of the period of incubation of the natural disease to be fixed.

On June 13 Chapron received a consignment of horses coming from a depot into the stables entrusted to him. When examined, all appeared perfectly healthy; and there was nothing to indicate the existence of a latent infection. Four of these horses afterwards developed epizootic lymphangitis, the first symptoms noted in the different animals were September 1 and 4, and October 2 and 11 respectively.

The animals, immediately after their arrival, had been consigned to various batteries, and had had no more contact with each other. The four cases therefore showed the following features:—the same disease, the same origin of the horses, no intercontact between the horses after their arrival at the stable, and a complete absence of other cases of lymphangitis in the stable.

One is therefore justified in admitting that these animals were bearers of the germs at the moment of their entrance into the stable, and that the period of incubation in each case had been longer than or at least not less than the time which elapsed from the day of the arrival to that on which the first symptoms of disease were noticed. These periods were respectively: 80 days for the first horse, 83 for the second, 111 for the third, and 120 for the fourth. These figures are well in accordance with the duration of incubation fixed by experimental test.—(*La Clinica Veterinaria*).

THE METHODICAL USE OF ANTISEPTICS.

Prof. Roux referred to this question in a communication to the Academy of Sciences early last year, and gave an account of Cazin's work upon the subject in collaboration with Mdlle. Krongold. According to these authors, the selection of the antiseptic to be used should depend upon the species of microbes to be combated, for the microbial flora of a wound are very variable. There is no universal antiseptic which is efficacious in all cases. Roux insists upon this point, and, following the work of Cazin and Mdlle Krongold, names the antiseptics most suitable in different cases. It follows from this that it is necessary to make an attentive examination of the microbial flora of a wound, and not to proceed without method to the employment of antiseptics.

The authors draw attention to the almost exclusive action of the serum of Leclainche and Vallée upon streptococcal suppurations, and its lesser efficiency in suppurations due to anærobes, such as the bacillus perfringens and the septic vibrion, accompanied by anærobic streptococci. In the treatment of infected wounds, the flora of which contain the bacillus pyocyanus or a predominance of staphylococci, associated with various diplococci, cocci, or other common bacteria, a solution of nitrate of silver has given the best results.—(*Revista de Veterinaria Militar*).

THE DOG AS A CARRIER OF ANTHRAX.

Luigi Sani reports some experiments upon this subject carried out at the Institute of Pathology at the Veterinary School of Turin. The aim was to decide if a dog in a perfect state of health, fed upon anthrax flesh or swallowing, or licking, or in other ways having contact with infective material, may, without suffering the least harm from it, become an agent of diffusion by means of his excrements. The high resistance of the dog against anthrax is well known; but his importance as a possible carrier of the disease is perhaps not yet sufficiently appreciated.

Three dogs were used for the experiments. Each received one meal, weighing in the different animals to 100, 200, and 300 grammes respectively, of a mixture of muscles, spleens, livers, hearts and kidneys of some guinea-pigs affected with anthrax. It was ascertained that this mixture was very rich in anthrax bacilli and spores.

The day after the meal, some of the fæces of each dog were collected and tested by cultural experiments; and all colonies of typical anthrax or suspected of being so were re-sown on other different media, and their virulence was proved by inoculation into guinea-pigs. Both cultural and inoculation tests yielded positive results in all three dogs. The collecting and testing of the fæces was repeated again and again at intervals of a few days, so long as the results remained positive. All the dogs remained perfectly healthy throughout the whole period of the experiments, though all continued to excrete virulent fæces for some time. The author's conclusions from the experiments may be summarised as follows:—

It is possible to demonstrate anthrax bacilli in the fæces of dogs which have fed upon anthrax flesh.

The test is positive even 26, 28, and 32 days after the ingestion.

From the author's observations it is clear that a dog fed upon anthrax flesh may propagate infection at a distance, and it is easy to explain how such dogs may become living agents of infection in remote districts. They traverse extensive regions, and defecate or vomit upon meadows and fields, and along the course of rivers and streams. Care should be taken not to allow dogs to eat the flesh of anthrax carcases or to lick contaminated material or utensils; and dogs should be kept away from places where recent anthrax carcases are buried, as it is well known that they try to dig them up to eat the flesh.—(*La Clinica Veterinaria*). W. R. C.

The progress of Immunisation in Rhodesia.

In our issue of Dec. 2 we reprinted portions of an article on "Immunity," from *The Rhodesia Agricultural Journal*, and subsequently commented on the endeavour of that and other Agricultural Departments overseas to "educate" the agriculturist in the value of the Veterinary Service placed at his disposal. The following extract is from the concluding article of the same series by Mr. Ll. E. W. Bevan, and is further evidence in the same direction.

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"*Plasmoses* occur in nearly all species of domestic animals in this country, the parasites being specific in respect to the diseases which they produce; that is to say, the parasite of the dog is pathogenic only to canines, the parasites of the ox set up disease only in cattle.

The so-called *malignant jaundice* or "biliary fever" of dogs is caused by a parasite (*P. canis*) akin to the redwater parasite of cattle, and is transmitted by the "dog tick." In this country the commonest form of the disease is characterised by intense anæmia; the bilious form is occasionally met with, chiefly among recently imported dogs or those of finer breeds. Locally-bred dogs, especially those born during the wet season, when ticks are prevalent, contract the disease early in life, and, suffering only from a mild form of the disease, recover and become tolerant, the parasite remaining in their blood for years.

This parasite responds in the same way as the redwater parasite to injections of trypan-blue, which cause it to disappear from the blood-stream. The infected animal recovers and becomes immune, although the parasites remain in its blood. The manner in which this immunity or tolerance is brought about has not been determined, but it is suggested that the drug destroys some parasites and arrests the activity of others. From the degenerated parasites toxins are liberated, against which, during the period in which the parasites are held in check by the drug, the organism of the infected animal responds by the production of anti-toxins; so that when the drug is subsequently eliminated and the surviving parasites again assert themselves, they are opposed by anti-bodies, which neutralise the toxins they produce and render them harmless. In practice, it has been found best to withhold the drug until the blood is freely charged with parasites, when its introduction will cause the destruction of the greatest number of them, and, on the basis of the above theory will bring about a plentiful production of anti-bodies and a lasting immunity. The indiscriminate application of the drug in mild cases is frequently attended by disappointing results, little or no immunity being established. The parasites often re-appear, giving rise to acute symptoms, when the second application of the dye fails to effect a cure.

Biliary fever of equines is a disease belonging to the same class which used to be prevalent in this country some years ago after the Boer war, when horses bred in countries free from the disease were imported into South Africa, and some of them made their way to Southern Rhodesia. The parasite is transmitted by the red-legged tick, which is practically ubiquitous in this country, so that the African-bred horses become infected early in life, recover, and afterwards carry the parasite in their blood. Occasionally the disease is met with in old horses whose lowered vitality reduces their immunity, and in all probability many cases of horse-sickness are complicated by a renewed activity of this parasite.

A method of conveying immunity was discovered by Theiler, who inoculated susceptible horses with the blood of young donkey foals which had recovered from the disease. The parasite so obtained was of low virulence, and set up a mild infection, from which the horse recovered and derived immunity.

East Coast fever is a disease of bovines caused by a parasite, *Theileria parva*, which is conveyed from sick to susceptible animals by the brown tick. No other species of animal is known to be susceptible to the disease, and when an infective tick bites any other species it produces no harm, and itself becomes cleansed from infection. In countries where this disease is enzootic, cattle appear to possess some degree of inherited immunity, but even in such areas the mortality among

young stock is appreciable. Experience in this country indicates that cattle of South African breeds show a lower death rate than those of local breeds, while the mortality among the latter is lower than among grade stock. It has been observed that the disease appears to increase in virulence by passage through better bred animals, and especially through unthrifty calves of improved stock.

The parasites are not hereditarily transmitted in the tick, but when taken up in infective blood by a tick, they are transmitted by it in the succeeding stage of its development. Thus, if the larva of the tick sucks blood containing the parasite, the tick is infective as a nymph, or, having sucked infective blood as a nymph, it is infective as an adult. The parasite, however, does not pass through the eggs of the tick. Whereas in redwater the parasites persist in the blood of recovered animals for years, the parasite of East Coast fever no longer exists in the blood of a recovered animal, which is therefore incapable of infecting ticks. Moreover, East Coast fever cannot be communicated by the inoculation of blood containing the parasite, even when several litres of blood are injected. It is probable that the form of the parasite which is present in the blood cannot undergo any further development until taken up by the tick; "the corpuscles merely serve as vehicles for the parasites wherein they are housed and maintained until they reach their destination within the tick, which serves as their vector" (Nuttall). The parasite inoculated by the tick makes its way into the internal organs, where by development it forms the so-called Koch's bodies, and probably gives rise to toxic substances. When the life of the host is endangered, the parasites emerge and make their way into the corpuscles, in order that they may maintain their existence by being picked up by the tick.

The fact that the developmental forms of the parasite are met with in the internal organs has suggested a means of conveying the disease with a view to establishing immunity. Infected gland or spleen substance is pounded up into an emulsion, and is injected into the veins of cattle. This gives rise to the disease in the majority of the treated animals, from which 40 per cent. to 80 per cent. may recover. This method was applied in the native territories of the Transkei, where over two hundred and fifty thousand cattle were inoculated, of which 40 per cent. recovered. In practice, however, the disease is generally dealt with by short-interval dipping, and the system of inoculation is only resorted to in exceptional circumstances where dipping is impracticable.

Trypanosomiasis. This term includes certain diseases of man and the lower animals caused by the invasion of the blood stream by minute flagellated protozoa called trypanosomes from their characteristic movements when viewed under the microscope.

The manner in which these parasites are transmitted from sick to healthy animals varies, but, as far as the trypanosomiases of this country are concerned, the most common method of transmission is by the bite of the so-called tsetse fly, a fact which has long been recognised, and had given rise to the name "fly disease," affected animals being generally referred to as "fly struck."

The economic importance of the trypanosomiases is greater than appears at first sight. Apart from the actual mortality caused by them, large areas of valuable territory, some sixty million acres in Northern Rhodesia and ten million acres in Southern Rhodesia, are rendered dangerous or unsuitable for settlement by the presence or menace of the tsetse fly.

In studying these diseases in the past, the greatest importance has been attached to the appearance or shape of the trypanosomes when viewed under the microscope, and elaborate systems of measuring and differentiating have been devised with the result that innumerable species have been identified. The smallest irregularity in any specimen has prompted some extremist to create a new species, with the result that much valuable time has been spent in this research which might have been devoted to more practical issues. Another feature upon which species have been created is the virulence of the parasite for different species of animals. But it is possible that these points of difference are sometimes evidence not so much of different species as of different strains of a common species, for it has been found that both the shape of a trypanosome and its virulence for certain animals can be modified by artificial conditions. Thus *T. brucei*, the animal parasite of South Africa, which has been studied very closely since its discovery as the cause of "Nagana" by Bruce in 1896, when inoculated into resistant animals, such as adders or tortoises, produces very small forms, but when transferred from them to rats, highly susceptible hosts, develops forms much larger than normal. It is, therefore, possible that in nature the shape of a trypanosome may be considerably modified by the susceptibility of the hosts in which it commonly maintains its existence.

Again, the virulence of a strain of trypanosome may vary by passage from animal to animal. When a natural strain, that is to say, a strain met with in an animal infected under natural conditions, is studied in the laboratory, it may be found to be virulent for some species of animals and harmless for others, which appear to be insusceptible to it. This resistance, however, may sometimes be found to be more apparent than real. For example, when the cattle trypanosome of the Hartley district was first investigated in 1909, great difficulty was experienced in establishing a strain of the parasite for study at the laboratory, the usual small laboratory animals resisting inoculation with natural virus, but eventually becoming infected after repeated inoculations or repeated doses, their resistant elements probably becoming exhausted thereby. It was only when a certain rabbit had been taken to the Hartley district, and had been inoculated for the third time with blood from a naturally infected ox, that it developed the disease. From this rabbit it was easy to infect other rabbits. Again, sheep are said to possess a marked degree of resistance to this trypanosome under natural conditions, and this was confirmed at the laboratory. But when once a sheep had become infected by repeated inoculations of infective blood, other sheep were readily infected from it, the disease produced in them increasing in virulence by inoculation from sheep to sheep, so that a strain of trypanosome, at first regarded as non-virulent for sheep, after a number of passages became capable of killing sheep with deadly certainty in less than sixty days.

Thus we see the shape and virulence of a strain of trypanosome greatly depends upon the susceptibility of the hosts to which during its evolution it has accommodated itself. In the so-called "fly-belts" the game harbour trypanosomes, although apparently unharmed by them, and serve as a "reservoir" from which tsetse flies feeding upon them pick up the parasite. But when these infective flies inoculate the progeny of these trypanosomes into unusual hosts, such as domestic animals, upon which they feed, they set up disease, sometimes chronic and sometimes acute, again depending upon the susceptibility of the animal. That the virulence of the strain depends upon the resistance of the host rather than the power of the parasite is shown by the fact that "fly-struck" cattle may harbour trypanosomes unharmed for months during the dry season and only develop acute symptoms of the disease a few weeks after the first rains, which probably reduce their vitality and powers of resistance.

Although this immunity or resistance against trypanosomes exists, it is not known upon what it depends and it has at present been found impossible to repro-

duce it artificially. Certain experiments have shown that the leucocytes, or white-blood cells, of resistant animals play an important part, while others prove that the serum of such animals, when mixed with virulent blood and inoculated into susceptible animals, will delay and sometimes entirely prevent infection. Unfortunately, it has not been found possible to put this knowledge to any practical use. It is possible that the virulence of the pathogenic trypanosomes depends upon toxins produced rather than the actual mechanical damage effected by the parasites. There is a trypanosomiasis prevalent among rats in most parts of the world in which the blood of infected animals is swarming with parasites (*T. lewisi*), sometimes more numerous than the red-blood cells themselves, and yet the death of infected animals is extremely rare. On the other hand, when sheep are infected with one of our local trypanosomes (*T. brucei*, var. *rhodesiense*), parasites are rarely found in the blood; nevertheless the disease produced is acute and death is inevitable. At present, however, it has not been found possible to isolate these toxins, or to produce anti-toxins to oppose them.

There are two principal forms of trypanosomiasis met with in man and animals in Southern Rhodesia. The first is due to a small trypanosome belonging to the *T. pecorum* group, and affects cattle exposed to the bite of tsetse fly which have previously picked up infection from game or other infected animals in the so-called "fly-belts." Under natural conditions the organism is apparently of a low degree of virulence, which, however, becomes enhanced by passage through highly susceptible hosts, such as cattle of improved breeds or animals whose vitality has been reduced by over-work, underfeeding, or unfavourable climatic conditions. In such circumstances, where sufficient tsetse flies are present to bring about the rapid transference of virus from animal to animal, the severity of the disease produced increases, and animals may die with alarming rapidity. Man, horses, mules, donkeys, goats, sheep and dogs are generally immune to natural infection, but exceptions have been met with. Dogs have been known to become infected in an area where the disease had become acute for cattle, and in another district where an exceptional number of tsetse flies was present. Very rarely the parasite has been met with in donkeys, in which it has given rise to a mild infection. Game harbour the parasite, apparently unharmed by it, and indigenous cattle, in areas where fly are few, or which have been rapidly passed through a "fly-belt" and infection has not been heavy, contract a very mild form of the disease, which may not produce any appreciable symptoms so long as other conditions are favourable. It is probable that in a large number of them actual recovery takes place. In cattle the disease is amenable to treatment by injections of preparations of antimony and arsenic. In outbreaks where the disease has assumed a virulent form and deaths have resulted, remarkable recoveries have occurred as the result of this treatment. It is probable that an actual cure is only effected in a small percentage of cases, but that the application of the drug brings about a state of tolerance similar to that produced in redwater by the application of trypan-blue. It is known that many of the animals, which have to all appearances recovered, continue to harbour the parasite in their blood, and remain unharmed by it until adverse circumstances reduce their power of resistance. A remarkable fact in connection with the drug treatment of trypanosomiasis is that if antimony or arsenic is applied in doses insufficient to arrest the disease, although the parasites may temporarily disappear from the peripheral blood after the first exhibition of the drug, they will again reappear, and will be found to possess a marked resistance to the drug, and in time, after repeated doses, will become completely immune to it. What is more, if such an arsenic-resistant race of trypanosomes is transferred to another animal, the decendant race of parasite developing in that animal will again prove arsenic-resistant. This power of developing immunity to drugs, which is shared by other species of protozoa, constitutes a grave difficulty in the treatment of the diseases to which they give rise.

The second form of trypanosomiasis is due to a parasite to which the undesirable name *T. rhodesiense* was given, but which is now recognised as a strain of *T. brucei*, which, of all South African trypanosomes, has been investigated for the greatest number of years, but was not hitherto recognised as infective to man. It was at first only encountered in certain areas of Southern Rhodesia, such as the Mafungabusi district, and it was at one time thought that certain climatic conditions were necessary for its existence. The recent discovery of cases in districts remote from the original area indicates that this theory may be incorrect. The disease first attracted attention in 1909, when a white man who had travelled from Northern Rhodesia arrived in Hartley, and was found to be infected with trypanosomes. His blood was inoculated by the writer into laboratory animals, and gave rise to a very acute disease in them, and also in sheep, goats and mules. The presence of trypanosomiasis infective to man caused considerable alarm, especially when on investigation a large number of game in the tsetse fly (*Glossina morsitans*) areas was found to harbour a parasite of similar appearance. However, it was pointed out that, in view of the prevalence of the parasite in the lower animals, and its extreme virulence when inoculated into man and domestic animals, the natural infection of man must be a rare occurrence. This contention has been proved to be correct, for since the discovery of the parasite, the number of human cases in infected areas has been comparatively few, and it is probable that in natural circumstances man does possess a certain degree of resistance to natural infection. Lately, donkeys in an infected area have become infected, but natives and white men working with them have escaped. Mules exposed for a few days have similarly contracted the disease, but their riders have remained unharmed. Dogs, goats, and sheep in a certain native village were shown to harbour trypanosomes of characteristic type, but no natives were found to be suffering from the disease. In another village, a native woman and her child were apparently the only persons affected.

The disease is very deadly, and does not yield to drug treatment. The parasite disappears after the first exhibition of large doses of antimony, but reappears and proves refractory to subsequent doses. In view of the uncertainty and unsatisfactory results of treatment in all forms of trypanosomiasis, and the inability to apply the known principles of immunity to any practical use, it is probable that the solution of the problem must depend upon the elimination of the tsetse fly. Just as yellow fever in the Panama zone has disappeared with the destruction of mosquitoes, and East Coast fever and redwater have been combated by the eradication of the tick, there is every reason to believe that the disappearance of trypanosomiasis from Southern Rhodesia will follow the discovery of a succestful method of eradicating the tsetse fly.

By way of appendix Mr. Bevan quotes records of various pedigree animals which he has successfully inoculated from 1908 onwards. In October, 1915, the owners of bulls inoculated at at Letombo in 1911 were circularised as to results, and eleven of the replies give breeding results in calves in the following numbers:—250, 220, 199, 120, 143, 164, 117, 226, 90, 145, 120. He states that these are "a few examples from a great many equally satisfactory:" and concludes with the following note:—

"The progeny of inoculated females, often disappointing with the first or second calf, generally improves. Even the first calves are sometimes satisfactory, as is shown by the fact that the bull calf of the cow 'Green Head Cherry 2nd,' inoculated in 1912, was sold as a yearling for the sum of £160, and many others of the same consignment are said to have given birth to healthy, well-developed calves valued at £10 to £50 each."

MEAT INSPECTION.

By WILLIAM J. HOWARTH, M.D. Manch., D.P.H.,
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The following excerpts are from the first of The Milroy Lectures, delivered before the Royal College of Physicians. These lectures are, of course, prepared for medical men, and it will be a matter of satisfaction to the veterinary profession that the exposition of the subject is in so capable hands.

The subject of Meat Inspection will, I believe, receive more attention after the war than has been the case in previous years. Many striking anomalies, and defects of an administrative character which call for reform and improvement exist, and to these official notice was being directed before the great upheaval temporarily relegated them along with other reforms to a position of comparative obscurity.

The distinguished physician with whose name these lectures are associated, and owing to whose munificence they have been established, enumerated in a peculiarly happy manner certain principles of necessary sanitary reforms which have proved to be almost prophetic since they outlined the directions along which practically all later sanitary improvements have progressed. Sufficient time has elapsed not only for these principles to have been put into practice, but for definite results to have been realised, and nobody can deny that they have conferred measureless benefits on the community at large. It must also be a source of satisfaction to English sanitarians to know that their earlier lines of action were so fully appreciated by workers in the same field in other countries that they followed the lead thus given with equally gratifying results.

One may safely say that it is only within the last 10 or 15 years that the control of the food of the people has received the serious attention which it merits. This is somewhat surprising, for although the lead in sanitary reform must rightly be given to Great Britain, progress in matters associated with the food supply has been much more rapid in other countries.

In these lectures only that part of the subject which deals with the inspection of flesh meat will receive attention, and even with this limitation many important topics will not be considered.

LACK OF UNIFORMITY IN INSPECTION.

Meat inspection in this country, with the exception of that conducted at a few special centres, is carried out by sanitary authorities in a distinctly haphazard manner. The work is rarely undertaken energetically, nor are there any regulations to control the system as it exists except as affecting foreign meat and the recommendations of the Royal Commission of 1898. The former indicate a definite line of action to be taken in certain circumstances; the latter, however, are submitted in the form of advice, and although fairly sound are not entirely satisfactory. Authorities are advised by the Local Government Board to require that inspectors, among whose duties may be included the inspection of meat, shall furnish evidence of competence, but I do not think this is a firm requirement in those districts in which there is only a single inspector. In addition to these deficiencies the fairly general absence of facilities for adequate inspection adds to the difficulties, with the result that want of uniformity exists both in the amount of inspection which is undertaken and in the decisions which are arrived at in comparable cases.

Absence of uniformity of inspection affords opportunities for the practice of much deceit, with the result that both the public and the honest trader are prejudiced. The former since it is possible for meat of unsound character to be sold, and the latter since he is handicapped in trade by a competitor who takes advantage of the local negligence which he knows exists.

Though much remains to be done before a satisfactory system exists, the position is apparently improving, for the Local Government Board in the Report for 1912-13 (p. lvi.) state that "of late years public attention has been increasingly directed to the importance of maintaining the purity of meat supplies." It is probable that this improvement is taking place chiefly in the large urban centres and in districts where officers who have specialised in public health work are engaged. That there is by no means a universal improvement will be gathered from the consideration of meat seizures in a year in any large area.

As a preliminary to the consideration of other figures, and for the purpose of giving some idea of the number of carcasses and offal which are condemned in a well-inspected area, figures are submitted which relate to condemnations in the private slaughter-houses situate within the area of the City of London at Aldgate. At these places an inspector is always on duty whenever slaughtering is in progress, as also is one or more Jewish officials, whose chief duties are to approve carcasses as kosher meat, for which purpose a considerable number are slaughtered on these premises. A by-law is also in force which requires butchers to give notice if they intend to slaughter animals before 7 a.m. or after 3 p.m. on Sundays, and before 6 a.m. or after 9 p.m. on weekdays. Supervision is therefore constant.

The number of different animals to which the classification relates is: cows, heifers, and oxen, 68,438; calves, 50,288; sheep, 102,912. Of these, 341 whole carcasses of beef and 197 quarters were destroyed as unfit for human consumption, as well as 139 whole carcasses and 21 quarters of veal, and 275 whole carcasses and 28 quarters of mutton. This indicates that about 5 per 1000 cattle are *wholly* condemned and over 2·5 per 1000 calves and sheep respectively.

[Comprehensive tables are given of the principal causes of condemnation of organs among these animals, compiled from summaries commenced by my predecessor, Dr. W. Collingridge, and Mr. T. Dunlop Young, veterinary surgeon to the Corporation.]

Paucity of Meat Inspection.

For comparative purposes the number of condemnations in a single year in an area comprising about a million persons has been extracted from the annual reports of the district medical officers of health. All the districts within the selected area are included in the summary, and, as there is only one county borough of small size, there are no centres from which well-inspected meat can be distributed on a large scale excepting London, which, of course, supplies a considerable amount of carcass meat to that part in closest contact. The area extends from London to the Channel.

There were ten urban areas with a combined population of 298,000 and three rural areas with a population of 59,000 in which meat was reported as having been condemned. In the urban districts the total condemnations were 12 carcases of meat, three carcases of mutton, one pig carcase, and certain pieces of indefinite character and amount, such as 1 cwt. of pieces of beef and pork;

several pieces of beef; parts of the carcases of eight bullocks, sheep and pigs; a sheep's liver; large quantities of unsound meat, fish, and fruit, a quantity of meat, and 225 lb. of frozen meat. In the rural districts the condemnations were one quarter of beef; "the carcase of a strangled bullock"; 50 lb. of meat; and a "considerable amount of meat."

In 15 urban districts and five rural districts with aggregate populations respectively of 173,000 and 68,000 the reports definitely stated that no unsound meat had been discovered.

In the reports relating to 16 urban districts and seven rural districts, with respective populations of 236,000 and 184,384, the subject was not referred to, and it is probable that in the majority of these places no unsound food had been dealt with.

Although it is impossible to state the number of animals slaughtered in any area in which inspection is only partially carried out it must be considerable in a population of 1,000,000, even if it is allowed that 45 per cent. of the supply is frozen or chilled imported meat, or that some home-killed meat in the carcase form is purchased at Smithfield, and the deduction is permissible that the figures stated indicate that meat inspection could not be practised on a much more meagre scale. This fact is further emphasised when it is remembered that of the meat condemned a certain portion was seized at military camps as a result of inspection by the military officers, since it may be assumed that if a certain amount of meat brought to these camps, with the knowledge that it will be inspected, is found to be unfit for human consumption, the general supply must also contain many more instances than those mentioned. The inadequacy of meat inspection in these selected districts is not exceptional, and I do not believe it is worse than that in similar districts.

As further bearing on this subject it should be observed that there is the risk of an excess of unsound meat being sold in districts in which meat is not examined, and more particularly when they adjoin or are in close proximity to a large town in which meat inspection is reasonably carried out. After the opening of the public abattoirs in Bury (Lancs.) Dr. A. E. Brindley, M.D., D.P.H. ("Public Abattoirs," *Public Health*, xvii., 442–450) reported that—

"It has not been an uncommon experience for the owner of an animal condemned by us to tell the inspector that it is the last time he will have the chance of taking any of his animals, and it has been found in each case that no more animals coming from this source have been slaughtered in the abattoirs. One naturally infers that the animals from such a man are now sent to other districts where inspection is less thorough."

This avoidance of supervision certainly ought not to be possible.

Absence of inspection in circumstances such as these also renders possible a trade in unsound carcases for use in prepared meats. These foods are manufactured chiefly from lean meat such as is frequently found on the carcases of old animals. These animals may have suffered from tuberculosis and whilst not marketable in the carcase form may avoid detection if cut up into small parts and all evidence of disease removed. That a trade in doubtful meat of this character does exist is undeniable, and it is most difficult to detect. If packed in baskets after being boned or even if loosely thrown into carts the careless method of transportation supports the contention that it is intended to be used for feeding animals, and it is only when discovered on food-preparation premises, or when actually being so transferred, that the evidence of ultimate use is sufficient to justify magisterial proceedings. Such meat can also be so trimmed, or parts selected with sufficient ease, to render it difficult to detect disease. In view of the fact that more instances of ill-effects to the community have been reported in recent years in this country from the consumption of prepared meat than of fresh meat it is desirable that all meat intended for use in the prepared form should be examined and passed before being so used.

(To be continued.)

PARLIAMENTARY.

In the House of Commons, Monday, Aug. 6.

Clipping of Army Horses.

Mr. Macpherson (Ross and Cromarty, L.), replying to Lieutenant-Colonel Sanders (Bridgwater, U.), said many horses of the British Expiditionary Force last winter were clipped at the base before being sent to the front and picketed out. Late clipping was only one of several contributing causes of horse mortality. There were, for instance, the reduction of the corn ration, the unusually hard and late winter, and, above all, the terrible condition of the ground in the region of the Somme and the Ancre. Clipping of horses infected with mange was necessary at all times in order to treat the disease, and it would always happen that a proportion of horses discharged cured from mange from veterinary hospitals would have to be issued to field units in a clipped condition. Orders had been issued to regulate clipping in the coming winter.

Experiments on Living Animals.

A return issued on Saturday, Aug. 4, for England and Scotland on the subject of vivisection in 1916 states that there were 66,043 experiments performed, 4530 fewer than in 1915, and that 64,295 operations were devoted entirely to inoculations, hypodermic injections, and "some few other proceedings," carried out without anæsthetics.

For the most part the animals were found to be suitably lodged and well cared for, but there were some irregularities. A licensee who held a certificate for inoculations into rodents, performed similar experiments on monkeys. As the Secretary of State was satisfied that the contravention was due to inadvertence, the licensee was admonished and cautioned. Another licensee performed an operation on a cat, and allowed the animal to recover from the anæsthetic, and in view of his want of attention to the fundamental provisions of the Act, his license was revoked.

Palm nut kernel meal.

A correspondent writing to *The North British Agriculturist* points out how this presumably valuable feeding stuff has been allowed to lapse to the Germans, apparently without an effort to bring it forward in our home markets. He says:—

"Palm kernel meal has now been manufactured for a very long time, but it has not been on the British market. Until the outbreak of war, and the consequent closing of the German ports, this huge trade—more than one-quarter of a million tons of nuts annually—was almost entirely in German hands. A small quantity of the nuts was imported annually into Britain, but almost all the cake left from the extraction of these was exported to the Continent, where it has always commanded a considerably higher price than in this country.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks (a)	Animals.	Out-breaks (a)	Animals.	Out-breaks (b)	Animals.	Out-breaks (b)	Animals.	(b)	Out-breaks (a)	Slaughtered.
GT. BRITAIN. Week ended Aug. 4	2	2					22	32	2	30	10
Corresponding week in 1916 ...	3	3			2	3	30	49		72	54
Corresponding week in 1915 ...	2	3			2	4	20	40		60	172
Corresponding week in 1914 ...	2	2			3	3	27	34		82	918
Total for 31 weeks, 1917	313	359			16	28	1756	3444	393	1605	690
Corresponding period in 1916 ...	348	409	1	24	34	57	1620	3690	178	3042	8439
Corresponding period in 1915 ...	393	451			34	63	540	1179	159	2747	12360
Corresponding period in 1914 ...	482	522	11	74	68	212	1503	2613	150	2599	27518

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.
(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked :—
Board of Agriculture and Fisheries, Aug. 7, 1917 Excluding outbreaks in army horses.

For many years continental consumers, to ensure supplies of palm nut kernel cake and meal, paid high prices—frequently in fact within five shillings per ton of the market price of linseed cake. To give an actual instance, on 10th February, 1914, the market price for palm nut kernel cake on the Continent was the same as that for linseed cake. Knowing the Germans as we now know them, we may rest assured that in this product there is an asset of great value to all who have means to use it."

EYELASHES IN DOMESTICATED ANIMALS.

In the note on this subject last week, fifth line to read: "It is true that the horse has, *besides fine eyelashes*, a few long vibrissoid hairs or feelers" etc.

OBITUARY.

WILLIAM AARON ALLOTT, M.R.C.V.S., Upwell, Wisbech. Graduated, N. Edin: May, 1894.

Mr. Allott passed away on August 3rd, aged 58 years. Interred at Upwell St. Peter's, on Wednesday, 8th.

JAMES MACNAB CHRISTY, M.R.C.V.S., Capt., S. Africa Veterinary Corps. Edin: May, 1889.

Capt. Christy died at Pretoria on June 29th, aged 48.

ARMY VETERINARY SERVICE.

Buckingham Palace, Aug. 3.

The following Officers had the honour of being received by the King, when His Majesty conferred Decorations as follows:—

THE MILITARY CROSS.

* * * *

Captain JAMES STEWART, Army Veterinary Corps.

War Office, Aug. 7.

The names of the following have been brought to the notice of the Secretary of State for War for valuable services rendered in connexion with the war:—

* * * *

Maj. (temp. Lt.-Col.) J. J. Aitken, D.S.O.; Maj. E. Day, ret. pay.

CANADIAN A.V.C.—Capt. A. E. Frape; Qrmr. and Hon. Lieut. A. Newell; Staff Sgt. F. Chappell, 785; Staff Sgt. W. Denton, 34704.

War Office, Aug. 8.

The King has been pleased to approve of the following Rewards for distinguished service in the Field, dated June 3:—

TO BE BREVET LIEUTENANT-COLONEL.

* * * *

Major (temp. Col.) H. M. Lenox-Conyngham, D.S.O., F.R.C.V.S., A.V.C.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, Aug. 2.

REGULAR FORCES. ARMY VETERINARY CORPS.

Lieut. to be Capt.:—G. H. Bennett (July 17).

Aug. 3.

Temp. Lts. to be temp. Capts.:—E. Salisbury (July 7); M. J. Flynn, T. Morland (July 17).

To be temp. Lieut.:—R. B. Crichton (July 18).

Aug. 6.

Temp. Lieuts. to be temp. Capts.:—P. W. Walker (July 21; G. C. Taylor, L. E. Pritchard, J. S. Keane, A. Rouse, T. Bannatyne, J. G. E. Gallie (July 24); J. A. Power (July 25).

Aug. 8.

Maj. W. S. Anthony to be actg. Lt.-Col. (Apl. 9, 1915) (substituted for the notification in the *Gazette* of Jan. 11, 1916).

Maj. W. C. Lowe to be actg. Lt.-Col. (June 25).

Temp. Lts. to be temp. Capts.:—W. G. Bunnell (May 24); H. Dyson (June 1); A. L. Purdy (June 8).

CANADIAN A.V.C.

Aug. 3.

Temp. Lieut. to be temp. Capt.:—C. French (April 17).

Aug. 4.

Capt. D. S. Tamblyn to be temp. Maj. whilst empld. as Asst. Dir. of Vety. Servs., *vice* Maj. F. Walsh (from Nov. 22, 1916 to Mar. 9, 1917).

Aug. 8.

Temp. Capt. A. Gaudry resigns his temp. commission (July 20).

NEW ZEALAND V.C.

Aug. 4.

Temp. Capt. C. S. Simpson to take rank and precedence in the Corps and in the Army as if his appt. as temp. Capt. bore date the 11th day of Nov., 1915).

TERRITORIAL FORCE, ARMY VETERINARY CORPS.

Aug. 2.

Capt. H. E. Powell relinquishes the actg. rank of Maj. on ceasing to be empld. as A.D.V.S. (June 28).

Capt. F. W. C. Drinkwater is granted actg. rank of Maj. whilst empld A.D.V.S. (June 20).

Capt. R. W. Williams is granted the actg. rank of Maj. whilst empld. as A.D.V.S. (June 28).

Aug. 3.

Lieut. (temp. Capt.) to be Capt.:—L. A. Ramsay, from D.L.I. (July 24).

Aug. 6.

Maj. E. M. Perry, F.R.C.V.S., to be actg. Lt.-Col. whilst empld. as A.D.V.S. (June 16).

The following casualty is reported:—

DIED OF WOUNDS—Capt. W. A. I. Buchanan, A.V.C.

"An undetected war scandal."

The following indictment appeared in *Truth* of July 25 under the heading of "Scrutator," and was reproduced in *The Sportsman* of July 26, followed by the comment of "An old Veterinary Officer" in the issue of 28th.

"I am rather averse to exposing administrative scandals arising out of the war when, as frequently happens, they have been discovered and put right behind the scenes before they can be made public. But there is one scandal which has been in existence so long, in spite of the knowledge of the facts which the military authorities must possess, that publicity is in this case not only necessary, but apparently the only remedy. I refer to the waste of horseflesh. I have lately come into possession of authentic information on this point, and it is calculated to excite the greatest horror and indignation.

Up to a recent date—somewhere about the end of May—upwards of a quarter of a million Army horses and mules had died during the war. In addition to these some 30,000 had been sold owing to age or disease. The total, therefore comes to upwards of 280,000 animals, and this figure does not include animals that have died in Mesopotamia or in operations in Africa outside Egypt, for most of which the Indian Government is probably accountable. Upwards of a million horses and mules have been purchased by the British Government during the war, and the stock on hand at the beginning of the war was nominally about 25,000. As the latter figure is negligible in relation to the others, it may be safely assumed that more than 25 per cent. of the animals purchased have died. Such a rate of mortality is beyond excuse or palliation, while the 30,000 sales in consequence of age or disease point directly to scandalous laxity in buying. In addition to the animals that have died there were at a quite recent date 84,000 more under treatment in veterinary hospitals in England, France, and the Mediterranean Forces. The rate of mortality appears to have been fairly uniform everywhere, presumably more or less in proportion to the size of the local forces. Thus 42,000 animals have died at home, 143,000 in France, 12,000 in Egypt, and 15,000 at Salonika. The last figure is perhaps specially significant in view of the size of the Salonika force, the fact that the expedition only dates from the end of 1915. But the most significant fact of all is that *33,000 animals have died in America while awaiting shipment*, while 6000 have died at sea in course of transit. Here we have 39,000 animals purchased for military purposes, not one of which has been available for that purpose owing to their previous decease. In this is presumably to be found the explanation of the greater part of the scandal—namely the culpable negligence, or worse, with which the animals have been bought. One would have thought that the purchase of 33,000 animals in America, not one of which lived long enough afterwards to be shipped to this country, would have opened the eyes of the military authorities to the stupidity or dishonesty of the officials engaged in this business and the extent to which the country was being plundered in consequence. But Gallio cared for none of these things.

One other point requires to be clearly understood. The deaths due to "enemy action" are no considerable proportion of the whole. I cannot give the total figures under this head, but in one week, out of more than 5000 deaths in France, only 118 were due to gunshot wounds—a trifling percentage. "Enemy action" might have contributed to the same extent to the 39,000 deaths in America or in transit, but it would not alter the broad inference from the facts. As a sidelight upon the general quality of the animals purchased. I am told that some which have survived the Atlantic voyage were found to be over thirty years old. Some are even said to have died upon the gangway at the port of shipment under the exertion of walking on board. It may almost be taken for granted that the rate of mortality on this side of the Atlantic has been aggravated by neglect, ignorant "horsemastership," and to some extent downright ill-treatment. On all these points men who have served at the front can give evidence. I have myself heard many lurid statements on the subject. But the figures show that the root of the whole scandal lies across the Atlantic where the wretched beasts were bought.

The official primarily responsible is the Director-General of the Army Veterinary Department. In looking into this matter I have heard nothing tending to mitigate his responsibility, though I suppose it is shared to some extent by the Remount Department. But it is not my business to adjust the burden of guilt, nor have I any taste for scapegoat-hunting at a time like the present. I merely give facts, which I assert can be verified from official records, and I leave the rest of the business in the hands of the House of Commons and the Government. There are many who will be profoundly moved by the humanitarian aspect of the case, and the amount of inexcusable suffering indicated by the lingering death of hundreds of thousands of animals under such circumstances is indeed appalling. There are others who will be more appalled by the material waste, and as I am told that the average price of a horse is about £40, this part of the scandal is evidently measured in millions of money. Others may feel chiefly concerned that the wholesale roguery, not to mention incompetence or negligence, which must have been at work all the time, shall be exposed and punished. Personally I sympathise with all these points of view, and I put the case forward as one which on every ground demands instant and exhaustive official investigation.

[It is common knowledge among horsemen that the real trouble is want of "horsemanship"; in fact, ignorance of stable craft is rife, and many a man of experience who has attempted to put things right has been properly "told off" by his superiors. The difference is always apparent when one comes across horses looked after by those who know and those who don't. It is much the same in the buying of the horses, and we recall the story of the gentleman attached to the Austrian Embassy at the time of the Boer war. He is reported to have said that there were no more bad horses in Hungary. The English Government had bought them all.—Editor *The Sportsman*.]

To the Editor of "The Sportsman."

Sir,—The report in your paper referring to the appalling loss of horseflesh between the time of purchase and coming into use for the purpose for which they were purchased shows an alarming state of inefficiency and incompetence, and reveals the Remount Department in its true light and the Veterinary Department with little or no voice in the selection of horses.

The expert buyers are selected by the Remount Department from the old cavalry or gunner officer who at some time of his career has owned two or three horses, and who in consequence "knows as much about a horse as any man breathing." The veterinary officer who attends these purchasing boards are usually very small fry to the retired cavalry colonel, who usually ignores them—unless to shift responsibility. The veterinary officer has to take a back seat during the whole of his career, and is placed in a very difficult position at a purchasing board to assert himself against the other members bf the board, who are very assertive as to knowledge and rank.

The real trouble lies in the Remount Department and the Veterinary Department being two Departments and not one, and the unprofessional man of high rank overriding the opinion of the expert, as happens in most cases.

Why should not the Army form its own Veterinary College and train men for regimental veterinary officers as in all other departments of the Army? The present veterinary officer devotes a lot of the four years at college to studying other animals than the horse, which could be well cut out. Two years study would be ample to train a veterinary surgeon, and under those conditions it would attract the same men as the Regular forces and give them the prestige and the same advantages as the Remount officer now enjoys.—Yours, etc.,

AN OLD VETERINARY OFFICER.

CORRESPONDENCE.

SWINE FEVER.

Sir,—It occurs to me that the present method adopted by the lay inspectors of the Board does not obtain all the *facts*. Rarely have I been interviewed when I have been connected with a case; though on occasions it might be mutually advantageous to us both.

The following will explain. Let A, B, C, D, represent four farms, or places where pigs are kept. C seeks my advice respecting his pigs. I advise that they should be reported as "suspected swine fever." This is done, and the disease is confirmed by the Board. An Inspector of the Board now comes upon the scene and tries to trace out the history. He finds that C bought his pigs from B and that B bought his pigs from A. *Many months* have intervened between the sale at A and the swine fever at C, but he finds that A before the sale had a pig die. He questions the owner as to this dead pig and is told that he called in his veterinary surgeon, who made a post-mortem examination and said all was right, and that the pig could be buried. (Had I been interviewed he would have been told that I had *never* seen the pig either dead or alive, but that I did know that a pig with a "non-fever" history had died).

I have little doubt that if one could read the Board's history as recorded it would be found that C got his trouble from A, and that I post-mortemed, missed, and buried a "swine fever" pig.

Although I never saw A's pig I believe the true history of the case is this:—

Some months before the trouble occurred at C, a pig belonging to D visited C premises. This pig came home and after a few weeks died; other pigs on the premises afterwards also died of "confirmed" swine fever. Having said so much I can now be brief. The history should, I think, be written thus:—C gave it to D, also to B. There is, of course, the possibility of D having taken it to C, and the history would then be: D, C, B. But in any event A is out of it.

In this case co-operation with the veterinary surgeon is conspicuous by its absence.

My card is enclosed.

COUNTRY PRACTITIONER.

LAMENESS AFTER THE MALLEIN TEST.

Dear Sir,—Referring to the note by M. Fayet on this subject, in your issue of July 21, p. 27: I have found that lameness in the foreleg on the side of the injection of mallein—especially when low down, is not a constant symptom of Glanders, but is very frequently observed in severe cases, together with a marked constitutional disturbance from the twelfth hour; these confirm the test and are very satisfactory.

CHARLES MORGAN, M.R.C.V.S.,
Veterinary Inspector, Wingham Division.

PROMOTION OF TERRITORIAL V.O.

Sir,—First let me state that I am not writing to complain of the treatment of Territorial officers, as so much has been said on this subject already, and in comparison to other professional men who have thrown up good appointments to "do their bit," I think we really have little to complain of, and it always makes me think of the parable of the labourers in the vineyard. What I wish to ask is to do with promotion. I had three examinations to pass respectively at Woolwich, Aldershot, and Dover, all entailing a certain amount of work and expense, before qualifying for my captaincy, besides having to wait five years before obtaining that rank. Now, I believe, this rank is conferred on men with only one year's service, and without examination or annual training. Will this difference (*viz.*, four years) go to our credit in obtaining our majority?

Please excuse scrawl, but am writing from hospital after being wounded on the 10th of last month.

7th August. ENQUIRER.

DRESS DISTINCTIONS OF VETERINARY OFFICERS.

Sir,—Up to the time that the khaki service jacket superseded the old blue service jacket, the monotony of the one colour was, in the case of the Army Veterinary Corps, relieved by maroon facings, which at the same time served as a means of readily distinguishing the Corps from other and combatant units. At the present time, in all Armies but our own, the Veterinary Officer has a distinctive mark that distinguishes him from others. I will take two cases —French and German. In the former the rank badges are in silver; in the latter, red edges to the black collar patch.

At the present time, various distinctions have been made to distinguish various departments. For example, the Recruiting Department wear dark green gorget patches in lieu of collar badges, and a green band round the hat under the badge.

As our facings are traditionally maroon, why do not Veterinary Officers wear gorget patches of this colour, and a similar coloured band under the badge on the hat? It is scarcely likely that this colour would be confused with the red of the Staff, but other colours could be chosen: for example, dark orange gorget patches with a line of black gimp, and an orange band round hat under badge.

Besides breaking the monotony of the all khaki, it would clearly distinguish Veterinary Officers from others. Perhaps other correspondents may care to give their views on the subject.—I am, yours faithfully,

"CURIOUS."

Communications for the Editors to be addressed
20 Fulham Road, London, S.W. 3